**Course: SCH4U**

**Strand or Unit: Chemical Systems and Equilibrium**

**Chris, Dan and Tamara**

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| **Big Ideas**  1. Chemical systems are dynamic and respond to changing conditions in predictable ways.  2. Applications of chemical systems at equilibrium have significant implications for nature and industry. |  | **Essential Question**  What role does chemical equilibrium play in bodily processes such as blood pH? How do different factors influence shifts in this equilibrium? |  | **Overall Expectations**  E1. analyse chemical equilibrium processes, and assess their impact on biological, biochemical,  and technological systems;  E2. investigate the qualitative and quantitative nature of chemical systems at equilibrium, and solve related problems;  E3. demonstrate an understanding of the concept of dynamic equilibrium and the variables that cause shifts in the equilibrium of chemical systems. |

**Guiding Questions**

1. How do we use buffer systems to our advantage? Why is having a buffer system advantageous? (E1)
2. How do industries take advantage of chemical equilibrium when producing chemicals? (E2.2)
3. Why is the pH of our blood buffered? What would happen if it is not buffered? (E2.4, 2.5)
4. What is the value of having different factors affect the shift in equilibria of chemical systems? (E3)